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1 [Mult-level system integration based on AUTOSAR](#)

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Ulrich Freund

May 2008 I CSE '08: Proceedings of the 30th international conference on Software engineering

Publisher: ACM

Full text available: [pdf\(121.01 KB\)](#)Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

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The design of distributed embedded real-time system is a challenging task. Besides solving the control-engineering issues, one has to consider real-time scheduling, reliability and production requirements w.r.t. production cost of the electronic control ...

Keyw ords: automatic code-generation, automotive, embedded software, rapid prototyping

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2 [Performance analysis of FlexRay-based ECU networks](#)

Andrei Hagiescu, Unmesh D. Bordoloi, Samarjit Chakraborty, Prahladavaradan Sampath, P. Vignesh

V. Ganesan, S. Ramesh

June 2007 DAC '07: Proceedings of the 44th annual conference on Design automation

Publisher: ACM

Full text available: [pdf\(385.20 KB\)](#)Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 8, Downloads (12 Months): 111, Citation Count: 0

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It is now widely believed that FlexRay will emerge as the predominant protocol for in-vehicle automotive communication systems. As a result, there has been a lot of recent interest in timing and predictability analysis techniques that are specifically ...

Keyw ords: FlexRay, automotive electronics, bus protocols

3 [Automotive electronics system, software, and local area network](#)

Yoshimi Furukawa, Seiji Kawamura

October 2006 CODES+ I SSS '06: Proceedings of the 4th international conference on

Hardware/software codesign and system synthesis

Publisher: ACM

Full text available: [pdf\(217.84 KB\)](#)Additional Information: [full citation](#), [abstract](#), [index terms](#)

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In this tutorial, an overview of automotive electronic systems and details of the development methodologies are presented. Automobiles were born to enhance human mobile performance. In early development stage, automotive engineers focused to strengthen ...


Keyw ords: automotive electronics

#### 4 [Quasi-Static Scheduling for Real-Time Systems with Hard and Soft Tasks](#)

Luis Alejandro Cortés, Petru Eles, Zebo Peng

February 2004 DATE '04: Proceedings of the conference on Design, automation and test in Europe - Volume 2, Volume 2

Publisher: IEEE Computer Society

Full text available:  [pdf\(265.55 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 7, Downloads (12 Months): 41, Citation Count: 0


This paper addresses the problem of scheduling for realtime systems that include both hard and soft tasks. The relative importance of soft tasks and how the quality of results is affected when missing a soft deadline are captured by utility functions ...

#### 5 [SystemC-AMS Requirements, Design Objectives and Rationale](#)

Alain Vachoux, Christoph Grimm, Karsten Einwich

March 2003 DATE '03: Proceedings of the conference on Design, Automation and Test in Europe - Volume 1, Volume 1

Publisher: IEEE Computer Society

Full text available:  [pdf\(128.51 KB\)](#)  [Publisher Site](#) Additional Information: [full citation](#), [abstract](#), [references](#), [cited by](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 1, Downloads (12 Months): 26, Citation Count: 7


This paper presents and discusses the foundations on which the analog and mixed-signal extensions of SystemC, named SystemC-AMS, will be developed. First, requirements from targeted application domains are identified. These are then used to derive design ...

#### 6 [Conducting forensic investigations of cyber attacks on automobile in-vehicle networks](#)

Dennis K. Nilsson, Ulf E. Larson

January 2008 e-Forensics '08: Proceedings of the 1st international conference on Forensic applications and techniques in telecommunications, information, and multimedia and workshop

Publisher: ICST (Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering)

Full text available:  [pdf\(345.47 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 1, Downloads (12 Months): 1, Citation Count: 0

The introduction of the wireless gateway as an entry point to an automobile in-vehicle network reduces the effort of performing diagnostics and firmware updates considerably. Unfortunately, the same gateway also allows cyber attacks to target the unprotected ...

Keyw ords: data, forensics, in-vehicle, in-vehicle network forensics, investigation, network, requirements, vehicle

#### 7 [Computer-aided architecture design & optimized implementation of distributed automotive EE systems](#)

Antal Rajnak, Ajay Kumar

June 2007 DAC '07: Proceedings of the 44th annual conference on Design automation

Publisher: ACM

Full text available:  [pdf\(405.09 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 6, Downloads (12 Months): 73, Citation Count: 0

Complexity of Automotive EE systems has grown exponentially during the past decade. Model-based function design and simulation are widely accepted and used by the Automotive EE community of today, to face some of the challenges. Emerging new standards ...


Keyw ords: AUTOSAR, CAN, LIN, scheduling, system-level design

8 Software Systems Engineering with Model-Based Design

Christopher Davey, Jon Friedman

May 2007 SEAS '07: Proceedings of the 4th International Workshop on Software Engineering for Automotive Systems

Publisher: IEEE Computer Society

Full text available:  pdf(284.44 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 13, Downloads (12 Months): 252, Citation Count: 0


Today's original equipment manufacturers (OEMs) and suppliers face the seemingly conflicting goals of reducing development time while improving quality, and reducing system complexity while delivering technical innovations. To meet these challenges, ...

9 Models for model's sake: why explicit system models are also an end to themselves.

Oliver Niggemann, Joachim Stroop

May 2008 ICSE '08: Proceedings of the 30th international conference on Software engineering

Publisher: ACM

Full text available:  pdf(1.37 MB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 0, Downloads (12 Months): 0, Citation Count: 0

In automotive software and system design, explicit system and especially software models have only recently found their way into the development process. This paper will try to give an overview for what such models have so-far been used and which advantages ...


Keyw ords: automotive software engineering, autosar, model-based development, software architecture, system engineering, tooling, uml

10 Specification and design of electronic control units

J. Bortolazzi, T. Hirth, T. Raith

September 1996 EURO-DAC '96/ EURO-VHDL '96: Proceedings of the conference on European design automation

Publisher: IEEE Computer Society Press

Full text available:  pdf(135.86 KB) Additional Information: [full citation](#), [references](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 3, Downloads (12 Months): 82, Citation Count: 0

11 Formal Methods for Integration of Automotive Software

Marek Jersak, Kai Richter, Rolf Ernst, Jorn-Christian Braam, Zheng-Yu Jiang, Fabian Wolf

March 2003 DATE '03: Proceedings of the conference on Design, Automation and Test in Europe: Designers' Forum - Volume 2, Volume 2

Publisher: IEEE Computer Society

Full text available:  pdf(136.13 KB)  Publisher Site Additional Information: [full citation](#), [abstract](#), [references](#), [cited by](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 3, Downloads (12 Months): 45, Citation Count: 2

Novel functionality, configurability and higher efficiency in automotive systems require sophisticated embedded software, as well as distributed software development between manufacturers and control unit suppliers. However, at least for engine control ...

12 On wheels, nuts and software

Michael Ellims

October 2004 SCS '04: Proceedings of the 9th Australian workshop on Safety critical systems and software - Volume 47, Volume 47

Publisher: Australian Computer Society, Inc.

Full text available:  pdf(277.88 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 4, Downloads (12 Months): 45, Citation Count: 0

In this paper I examine the issue of whether we can trust software systems and put forward an argument that in an absolute sense the answer must necessarily be no for a multitude of reasons. The paper then examines the question of whether this is an ...

Keywords: limits, requirements, safety, systems

### 13 [Business situation reflected in automotive electronic architectures: analysis of four commercial cases](#)



Joakim Fröberg, Kristian Sandström, Christer Norström

May 2005 SEAS '05: Proceedings of the second international workshop on Software engineering for automotive systems

Publisher: ACM

Full text available: pdf(73.79 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 3, Downloads (12 Months): 80, Citation Count: 0

Automotive vehicle electronic systems are developed facing a complex and large set of inter-related requirements from numerous stakeholders, many of which are internal to the Original Equipment Manufacturer, OEM. The electronic architecture, of the product, ...

Keywords: automotive, case-study, electronic architecture, requirements

### 14 [Business situation reflected in automotive electronic architectures: analysis of four commercial cases](#)



Joakim Fröberg, Kristian Sandström, Christer Norström

July 2005 ACM SIGSOFT Software Engineering Notes, Volume 30 Issue 4

Publisher: ACM

Full text available: pdf(73.79 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 3, Downloads (12 Months): 80, Citation Count: 0

Automotive vehicle electronic systems are developed facing a complex and large set of inter-related requirements from numerous stakeholders, many of which are internal to the Original Equipment Manufacturer, OEM. The electronic architecture, of the product, ...

Keywords: automotive, case-study, electronic architecture, requirements

### 15 [Assessing the effect of failure severity, coincident failures and usage-profiles on the reliability of embedded control systems](#)



Frederick T. Sheldon, Kshamta Jerath

March 2004 SAC '04: Proceedings of the 2004 ACM symposium on Applied computing

Publisher: ACM

Full text available: pdf(327.91 KB)

Additional Information: [full citation](#), [abstract](#), [references](#)

Bibliometrics: Downloads (6 Weeks): 2, Downloads (12 Months): 44, Citation Count: 0

The increasingly ubiquitous use of embedded systems to manage and control our technologically (ever-increasing) complex lives makes us more vulnerable than ever before. Knowing how reliable such systems are is absolutely necessary especially for safety, ...

Keywords: design, measurement, performance, reliability

### 16 [Software Engineering for Automotive Systems: A Roadmap](#)

Alexander Pretschner, Manfred Broy, Ingolf H. Kruger, Thomas Stauner

May 2007 FOSE '07: 2007 Future of Software Engineering

Publisher: IEEE Computer Society

Full text available: pdf(896.23 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [cited by](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 63, Downloads (12 Months): 701, Citation Count: 3

The first pieces of software were introduced into cars in 1976. By 2010, premium class vehicles are expected to contain one gigabyte of on-board software. We present research challenges in the domain of automotive software engineering.

# 17 [Self-adaptive ant colony optimisation applied to function allocation in vehicle networks](#)



Manuel Förster, Bettina Bickel, Bernd Hardung, Gabriella Kókai

July 2007 GECCO '07: Proceedings of the 9th annual conference on Genetic and evolutionary computation

Publisher: ACM

Full text available: pdf(204.61 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 10, Downloads (12 Months): 143, Citation Count: 0

Modern vehicles possess an increasing number of software and hardware components that are integrated in electronic control units (ECUs). Finding an optimal allocation for all components is a multi-objective optimisation problem, since every valid allocation ...

Keywords: ant colony optimization, automobile industry, multi-objective optimisation, self-adaptation

# 18 [Methods and tools for systems engineering of automotive electronic architectures](#)

Jakob Axelsson

March 2001 DATE '01: Proceedings of the conference on Design, automation and test in Europe

Publisher: IEEE Press

Full text available: pdf(31.33 KB)

Additional Information: [full citation](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 4, Downloads (12 Months): 24, Citation Count: 0

# 19 [Making Decisions in Integration of Automotive Software and Electronics: A Method Based on ATAM and AHP](#)

Peter Wallin, Joakim Froberg, Jakob Axelsson

May 2007 SEAS '07: Proceedings of the 4th International Workshop on Software Engineering for Automotive Systems

Publisher: IEEE Computer Society

Full text available: pdf(165.89 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 9, Downloads (12 Months): 102, Citation Count: 0

In this paper we present a new method for making decisions on integration strategy for in-vehicle automotive systems. We describe the problem of choosing integration strategy and we describe the method, which is a combination of the Architecture Tradeoff ...

# 20 [A universal communication model for an automotive system integration platform](#)

T. Demmeler, P. Giusto

March 2001 DATE '01: Proceedings of the conference on Design, automation and test in Europe

Publisher: IEEE Press





Full text available: pdf(308.97 KB)

Additional Information: [full citation](#), [references](#), [cited by](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 7, Downloads (12 Months): 58, Citation Count: 5

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